What is claimed is:

1. A porous ceramic material having mesopores with a diameter of 2 nm to 50 nm on the surface thereof and being fibrous.

2. A porous ceramic material according to Claim 1, which is a substantially hollow fiber or a substantially solid fiber.

3. A porous ceramic material according to Claim 1, wherein the mesopores have a pore structure including a hexagonal structure.

4. A porous ceramic material according to Claim 1, wherein the porous ceramic material comprises at least one selected from the group consisting of alumina, titania, tin oxide, zirconia, zinc oxide and silica.

5. A porous ceramic material according to Claim 4, wherein the porous ceramic material comprises one selected from the group consisting of alumina, titania and tin oxide.

6. A porous ceramic material according to Claim 1,

which is a fibrous porous aluminum oxide having mesopores with a diameter of 2 nm to 10 nm.

7. A porous ceramic material according to Claim 1, which is at least one selected from the group consisting of a catalyst, a catalyst carrier, a photocatalyst, a sensor and an oxide conductor.

8. A process for producing a porous ceramic material, comprising the steps of:

immersing a fibrous matrix in an aqueous solution containing a metal source, a surfactant and urea, and heating the aqueous solution so as to deposit a metallic compound on the outer surface of the fibrous matrix; and

eliminating the fibrous matrix from the resulted fibrous matrix bearing the deposited metallic compound on the outer surface thereof.

9. A process for producing a porous ceramic material according to Claim 8, wherein the step of eliminating the fibrous matrix comprises firing the fibrous matrix bearing the deposited metallic compound so as to burn out the fibrous matrix.

10. A process for producing a porous ceramic

material according to Claim 9, wherein firing is conducted at 500°C to 1,300°C for 60 minutes or longer.

11. A process for producing a porous ceramic material according to Claim 8, wherein the fibrous matrix is at least one selected from the group consisting of a cotton fiber, a wool fiber and a synthetic fiber.

12. A process for producing a porous ceramic material according to Claim 11, wherein the fibrous matrix is a cotton fiber.

13. A process for producing a porous ceramic material according to Claim 8, wherein the metal source is at least one selected from the group consisting of Al halide, Al alkoxide, Al sulfate, Al oxysulfate, Al nitrate, Al acetate, Al oxalate, aluminate, Ti halide, Ti alkoxide, Ti sulfate, Ti oxysulfate, Ti nitrate, Ti acetate, Ti oxalate, titanate, Sn halide, Sn alkoxide, Sn sulfate, Sn oxysulfate, Sn nitrate, Sn acetate, Sn oxalate, stannate, Si halide, Si alkoxide, Si sulfate, Si oxysulfate, Si nitrate, Si acetate, Si oxalate, silicate, Zr halide, Zr alkoxide, Zr sulfate, Zr oxysulfate, Zr nitrate, Zr acetate, Zr oxalate, Zn halide, Zn alkoxide, Zn sulfate, Zn oxysulfate, Zn nitrate, Zn acetate, Zn oxalate, and hydrates thereof.

14. A process for producing a porous ceramic material according to Claim 13, wherein the metal source is at least one of $Al(NO_3)_3$, $AlCl_3$, and hydrates thereof.

15. A process for producing a porous ceramic material according to Claim 8, wherein the surfactant is an anionic surfactant containing a dodecyl sulfate ion.

16. A process for producing a porous ceramic material according to Claim 15, wherein the surfactant is sodium dodecyl sulfate.

17. A process for producing a porous ceramic material according to Claim 8, wherein the aqueous solution contains 1 part by mole to 10 parts by mole of the surfactant, 10 parts by mole to 50 parts by mole of urea and 1 part by mole to 100 parts by mole of water with respect to 1 part by mole of the metal source.

18. A process for producing a porous ceramic material according to Claim 8, wherein the immersing of the fibrous matrix in the aqueous solution is conducted at the aqueous solution temperature of 60°C to 90°C for 1 hour or longer.